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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,488

06/09/2005

Junichiro Tonami

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04/23/2008

NATH & ASSOCIATES
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Alexandria, VA 22314

EXAMINER

ALUNKAL, THOMAS D

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,488	Applicant(s) TONAMI, JUNICHIRO	
	Examiner THOMAS D. ALUNKAL	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,10,11,14,15 and 20 is/are rejected.
- 7) ☒ Claim(s) 2,3,6-9,12,13 and 16-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/9/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 5, 10, 11, 14, 15, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Yasuda et al. (hereafter Yasuda)(US PgPub 2002/0150016).

Regarding claim 1, Yasuda discloses an optical disk unit having reproducing means for reproducing information recorded in an information recording layer of an optical disk (see Title), comprising: a laser beam source (Figure 11, Element 1); an aberration corrector to correct a spherical aberration by adjusting the diverging or converging angle of a laser beam emitted from the laser beam source (Figure 11, Element 201); an objective lens to condense the laser beam and form a condensed beam spot on the information recording layer (Figure 1, Element 5); a focus controller having a moving mechanism to move the objective lens along an optical axis of the

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laser beam, the focus controller moving the objective lens so that the condensed beam spot focuses on the information recording layer (Figure 11, Element 7); detecting means for allowing the focus controller to move the objective lens by a predetermined distance from an in-focus position in a first direction (Figure 11, Element 7), allowing the reproducing means to reproduce a random signal having a plurality of amplitudes and periods from an optional area of the information recording layer (Figure 11, Element 15), extracting a specific portion having a specific amplitude or period from the reproduced random signal or an interpolated signal thereof, finding a first amplitude value in the specific portion (Figure 11, Element 16 and Paragraph 0159), allowing the focus controller to move the objective lens by the predetermined distance from the in-focus position in a second direction that is opposite to the first direction (Figure 11, Element 7), allowing the reproducing means to reproduce a random signal having a plurality of amplitudes and periods from the optional area of the information recording layer (Figure 11, Element 15), extracting a specific portion having a specific amplitude or period from the reproduced random signal or an interpolated signal thereof, and finding a second amplitude value from the specific portion (Figure 11, Element 16 and Paragraph 0159); and controlling means for controlling the aberration corrector so that the difference between the first amplitude value and the second amplitude value approaches zero (Figure 11, Element 18 and Paragraph 0159 where the amplitudes of the first and second focus error signals are maximized resulting in a difference value approaching zero).

Regarding claim 4, Yasuda discloses wherein: the detecting means is an envelope detector to detect envelopes in the specific portions and find the first and second amplitude values (Figure 11, Element 16 and Figure 7A where maximum amplitude detection correlates to an envelope detection of maximum values).

Regarding claim 5, Yasuda discloses an optical disk unit having reproducing means for reproducing information recorded in an information recording layer of an optical disk (see Title), comprising: a laser beam source (Figure 11, Element 1); an aberration corrector to correct a spherical aberration by adjusting the diverging or converging angle of a laser beam emitted from the laser beam source (Figure 11, Element 201); an objective lens to condense the laser beam and form a condensed beam spot on the information recording layer (Figure 1, Element 5); a focus controller having a moving mechanism to move the objective lens along an optical axis of the laser beam, the focus controller moving the objective lens so that the condensed beam spot focuses on the information recording layer (Figure 11, Element 7); detecting means for allowing the focus controller to move the objective lens by a predetermined distance from an in-focus position in a first direction (Figure 11, Element 7), allowing the reproducing means to reproduce a random signal having a plurality of amplitudes and periods from an optional area of the information recording layer (Figure 11, Element 15), extracting a first specific portion having a first specific amplitude or period and a second specific portion having a second specific amplitude or period from the reproduced random signal or an interpolated signal thereof (Figure 11, Element 16 and Paragraph 0159 where the FE signal generation circuit generates signal with a plurality of

amplitudes), finding a first differential value between an amplitude value of the first specific portion and an amplitude value of the second specific portion (Figure 11, Element 18 and Paragraph 0159), allowing the focus controller to move the objective lens by the predetermined distance from the in-focus position in a second direction that is opposite to the first direction (Figure 11, Element 7), allowing the reproducing means to reproduce a random signal having a plurality of amplitudes and periods from the optional area of the information recording layer (Figure 11, Element 15), extracting a third specific portion having a third specific amplitude or period and a fourth specific portion having a fourth specific amplitude or period from the reproduced random signal or an interpolated signal thereof (Figure 11, Element 16 and Paragraph 0159 where the FE signal generation circuit generates signal with a plurality of amplitudes), and finding a second differential value between an amplitude value of the third specific portion and an amplitude value of the fourth specific portion (Figure 11, Element 18 and Paragraph 0159); and controlling means for controlling the aberration corrector so that the difference between the first differential value and the second differential value approaches zero ((Figure 11, Element 18 and Paragraph 0159 where the amplitudes of the first through fourth focus error signals are maximized resulting in a difference value approaching zero).

Regarding claim 10, Yasuda discloses an optical disk unit having reproducing means for reproducing information recorded in an information recording layer of an optical disk (see Title), comprising: a laser beam source (Figure 11, Element 1); an aberration corrector to correct a spherical aberration by adjusting the diverging or

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converging angle of a laser beam emitted from the laser beam source (Figure 11, Element 201); an objective lens to condense the laser beam and form a condensed beam spot on the information recording layer (Figure 1, Element 5); a focus controller having a moving mechanism to move the objective lens along an optical axis of the laser beam, the focus controller moving the objective lens so that the condensed beam spot focuses on the information recording layer (Figure 11, Element 7); a waveform equalizer for setting a boost quantity for a signal reproduced by the reproducing means from information recorded in the information recording layer and equalizing the waveform of the reproduced signal (Figures 7A and 7B where amplitude of error signal is increased); detecting means for allowing the focus controller to move the objective lens by a predetermined distance from an in-focus position in a first direction (Figure 11, Element 7), allowing the reproducing means to reproduce a random signal having a plurality of amplitudes and periods from an optional area of the information recording layer (Figure 11, Element 15), detecting a first boost quantity used by the waveform equalizer for the reproduced random signal (Figure 11, Element 16 and Paragraph 0159), allowing the focus controller to move the objective lens by the predetermined distance from the in-focus position in a second direction that is opposite to the first direction (Figure 11, Element 7), allowing the reproducing means to reproduce a random signal having a plurality of amplitudes and periods from the optional area of the information recording layer (Figure 11, Element 15), and detecting a second boost quantity used by the waveform equalizer for the reproduced random signal (Figure 11, Element 16 and Paragraph 0159); and controlling means for controlling the aberration

corrector so that the difference between the first boost quantity and the second boost quantity approaches zero (Figure 11, Element 18 and Paragraph 0159 where the amplitudes of the first and second focus error signals are maximized resulting in a difference value approaching zero).

Method claims 11 and 14 are drawn to the method of using the corresponding apparatus claimed in claims 1 and 4. Therefore method claims 11 and 14 correspond to apparatus claims 1 and 4 and are rejected for the same reasons of anticipation as used above.

Method claim 15 is drawn to the method of using the corresponding apparatus claimed in claim 5. Therefore method claim 15 corresponds to apparatus claim 5 and is rejected for the same reasons of anticipation as used above.

Method claim 20 is drawn to the method of using the corresponding apparatus claimed in claim 10. Therefore method claim 20 corresponds to apparatus claim 10 and is rejected for the same reasons of anticipation as used above.

Allowable Subject Matter

Claims 2, 3, 6, 7, 8, 9, 12, 13, 16, 17, 18, and 19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 2 and 6, the prior art taken either singularly or in combination fails to anticipate or fairly suggest the optical disk unit as set forth in claims 1 and 5,

respectively, further comprising: ***determining means for determining whether or not the information recording layer has a record to reproduce a random signal by the detecting means; and recording means for recording a random signal having a plurality of amplitudes and periods in the optional area of the information recording layer if the determining means determines that the information recording layer has no record to reproduce a random signal by the detecting means.***

Claims 3 and 7 depend from claims 2 and 6, respectively.

Regarding claim 8, the prior art taken either singularly or in combination fails to anticipate or fairly suggest the optical disk unit as set forth in claim 5, wherein the detecting means comprises: ***zero-cross detecting means for detecting a zero-cross point where the reproduced random signal or an interpolated signal thereof crosses a preset zero level; time interval detecting means for detecting a time interval between two adjacent zero-cross points; and extracting means for extracting the first to fourth specific portions according to time intervals detected by the time interval detecting means.***

Regarding claim 9, the prior art taken either singularly or in combination fails to anticipate or fairly suggest the optical disk unit as set forth in claim 5, wherein the detecting means comprises: ***zero-cross detecting means for detecting a zero-cross point where the reproduced random signal or an interpolated signal thereof crosses a preset zero level; partial response determining means for using zero-cross points detected by the zero-cross detecting means and the reproduced***

random signal or an interpolated signal thereof, to determine a target value for each sampling point of the reproduced random signal or an interpolated signal thereof according to run-length limitation and state transition determined by partial response characteristics; and extracting means for extracting the first to fourth specific portions according to target values determined by the partial response determining means.

Claims 12, 13, 16, and 17 recite substantially similar limitations to those recited in claims 2, 3, 6, and 7, respectively, and are objected to for the reasons provided above.

Claims 18 and 19 recite substantially similar limitations to those recited in claims 8 and 9, respectively, and are objected to for the reasons provided above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al. (US PgPub 2003/0063533) discloses an optical pickup apparatus with an aberration correcting element. Ando et al. (US PgPub 2002/0060958) discloses an optical information processing system using optical aberrations. Tateishi (US PgPub 2003/0007431) discloses a focus jump method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS D. ALUNKAL whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas D Alunkal/
Examiner, Art Unit 2627

/Wayne R. Young/
Supervisory Patent Examiner, Art Unit 2627